



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,931	03/18/2004	Kenji Ueda	119094	5169
25944	7590	10/05/2005	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			PRESTON, ERIK D	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

2/ EJC

# Office Action Summary

Application No.

10/802,931

Applicant(s)

UEDA ET AL.

Examiner

Erik D. Preston

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 04/09/2004, 8/13/04, 6/9/05 + 9/19/05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: See Continuation Sheet.

Continuation of Attachment(s) 6). Other: IDS: 08/13/2004; 06/09/2005; 09/19/2005.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 10 & 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Larson (US 3198972).

With respect to claim 1, Larson teaches an AC generator, comprising: A rotor (Fig. 3, #39); a stator (Fig. 3, #16) disposed in opposed relation to said rotor; a frame (Fig. 3, #18) for supporting said rotor and said stator; a rectifier (as seen in Fig. 2) fixedly secured to said frame and equipped with a radiating fin (Fig. 2, #70) which cools a rectifying element (Fig. 2, #80) and makes an electrical connection; and a cooling wind generating device (Fig. 2, #66) for sucking cooling wind through said rectifier into the rotor side, wherein said radiating fin includes a fixing portion (Fig. 3, #74) to which said rectifying element is fixedly secured and a sub-fin (Fig. 2, #86) extending radially from said fixing portion, and said radiating fin has an opening portion (as seen in Fig. 3) surrounded by said fixing portion, said sub-fin, and an outer circumferential portion of said radiating fin.

With respect to claim 2, Larson teaches the generator of claim 1, wherein a thickness of said fixing portion in a radial direction is smaller than a thickness of said sub-fin in an axial direction of said rectifying element (as seen in Fig. 3).

With respect to claim 3, Larson teaches the generator of claim 1, wherein a cooling wind suction side end portion of said sub-fin further protrudes toward a cooling wind suction side with respect to a cooling wind suction side end portion (as seen in Fig. 3).

With respect to claim 4, Larson teaches the generator of claim 3, wherein the sub-fin has a first wall surface disposed on an outer-diameter side around said rectifying element and a second wall surface disposed on an inner-diameter side to make an angle below 180 degrees with respect to said first wall surface (as seen in Fig. 2).

With respect to claim 5, Larson teaches the generator of claim 1, wherein said radiating fin is made of aluminum in a die-casting manner (Col. 2, Lines 59-62).

With respect to claim 6, Larson teaches the generator of claim 1, wherein a standing portion protruding toward a cooling wind suction side with respect to a cooling wind suction side end portion of said fixing portion is formed on an inner-circumferential end portion of said radiating fin (as seen in Fig. 3).

With respect to claim 10, Larson teaches the generator of claim 1, wherein a thickness of said sub-fin corresponding to said rectifying element in an axial direction of said rectifying element is made irregular (as seen in Fig. 3).

With respect to claim 11, Larson teaches the generator of claim 1, wherein an output terminal (Fig. 2, #94) is provided at one end portion of said radiating fin along its circumferential direction, and said sub-fin corresponding to said rectifying element disposed on the other end side along the circumferential direction is made so that its thickness in an axial direction of said rectifying element is larger than a thickness (in the

Art Unit: 2834

radial direction) of sub-fins corresponding to other rectifying elements (as seen in Figs. 1 & 2).

Claims 12-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Hiroyuki (JP 10-056760 supplied by applicant).

With respect to claim 12, Hiroyuki teaches an AC generator comprising: A rotor (Fig. 1, #2); a stator (Fig. 1, #3) disposed in opposed relation to said rotor; a frame for supporting said rotor and said stator; a rectifier (Fig. 3, #5) fixedly secured to said frame and equipped with a radiating fin which cools a rectifying element (Fig. 3, #54) and makes an electrical connection; and a cooling wind (Fig. 3, W) generating device (Fig. 1, #26) for sucking cooling wind through said rectifier into the rotor side, wherein said radiating fin includes a fixing portion (as seen in Fig. 7A) to which said rectifying element is fixedly secured and a first sub-fin (the portion of the radiating fin that the label Fig. 3, #52 is pointing to) extending radially from said fixing portion and a second sub-fin (Fig. 7A, #57) made to divide and opening portion surrounded by said fixing portion, said first sub-fin and an outer circumferential end portion of said radiating fin.

With respect to claim 13, Hiroyuki teaches the generator of claim 12, wherein at least one side surface forming said opening portion (Fig. 7A, #59) is made to be inclined to reduce an opening area along a flow of the cooling wind to be sucked (as seen in Fig. 7B).

With respect to claim 14, Hiroyuki teaches the generator of claim 12, wherein said second sub-fin has an arc-like configuration formed concentrically with the axis of said rectifying element (as seen in Fig. 7A).

With respect to claim 15, Hiroyuki teaches the generator of claim 12, wherein said second sub-fin is located on a more outer diameter side with respect to said fixed position of said rectifying element around said rotary shaft of said rotor.

With respect to claim 16, Hiroyuki teaches the generator of claim 12, wherein a length of said second sub-fin along a direction of a rotary shaft of said rotor is set to be shorter than the length of said first sub-fin in the rotary shaft direction, and a cooling wind suction side end portion of said second sub-fin is located on a cooling wind generating device side with respect to a suction side end portion of said first sub-fin (as seen in Fig. 7B).

With respect to claim 17, Hiroyuki teaches the generator of claim 12, wherein said radiating fin includes, as two types of radiating fins, a positive electrode side radiating fin and a negative electrode side radiating fin which are disposed in piles in a direction of a rotary shaft rotor, and at least said radiating fin disposed on the upstream side along a flow of the cooling wind has said first and second sub-fins (as seen in Fig. 3).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larson (US 3198972) in view of Hiroyuki (JP 10-056760 supplied by applicant).

With respect to claims 7 & 8, Larson teaches the generator of claim 1, wherein said radiating fin includes, as two types of radiating fins, a positive electrode side radiating fin, and a negative electrode side radiating fin, a lead portion (Fig. 2, #80a) of said rectifying element fixedly secured to one radiating fin confronts the other radiating fin side and a cooling wind suction side end surface position of the other cooling fin is set on the upstream side along a flow of the cooling wind with respect to a joint position of said lead portion (as seen in Fig. 2), and said sub-fin and said opening portion are made in at least one radiating fin located on the upstream side along a flow of the cooling wind and a plurality of protruding portions are formed at a position on the other radiating fin corresponding to said opening portion, but it does not teach that said radiating fins are disposed in piles. However, Hiroyuki teaches positive and negative electrode side radiating fins disposed in piles (as seen in Fig. 3). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the rectifier of Larson in view of the rectifier as taught by Hiroyuki because it provides a means for enhancing the cooling efficiency of a rectifying device by directly cooling a rectifying element (Hiroyuki, Abstract).

With respect to claim 9, Larson in view of Hiroyuki teaches the generator of claim 8, and Larson teaches that said plurality of protruding portions are formed radially around said rotary shaft of said rotor (as seen in Fig. 2).




**Conclusion**

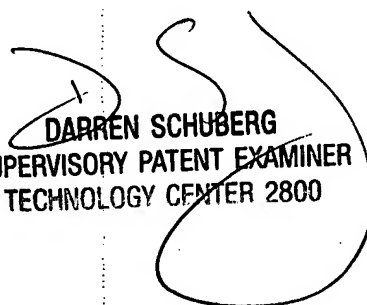
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 4321664, US 5473208, US 5640062, US 6828703, US 2004/0051409 & US 2004/0256925.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erik D. Preston whose telephone number is 571-272-8393. The examiner can normally be reached on Monday through Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
09/22/2005

  
DARREN SCHUBERG  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800